

BIGGS (H.) & HUDDLESTON (J.H.)

*The Sanitary Supervision of Tuberculosis
as Practised by the New York City
Board of Health.*

BY

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THE SANITARY SUPERVISION OF TUBERCULOSIS AS PRACTISED BY THE NEW YORK CITY BOARD OF HEALTH.

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In 1882 Koch published his classical paper on Tuberculosis, showing that it was an infectious and communicable disease caused by the tubercle bacillus. With the establishment of this proposition the disease would naturally have come under the immediate consideration of sanitary authorities, but time was needed to create a general belief in the truth of Koch's statements, and for this reason some years elapsed before action based on his observations was anywhere taken. Even in Berlin, which has been so long the centre of scientific medical research, and where Koch's work was published, no attempt has been made toward the sanitary surveillance of this disease. It is in New York City and within the last year that the most advanced and the only decided steps have been taken in the adoption of active measures designed to prevent the spread of tuberculosis.

The measures finally adopted were preceded by others intended to widely diffuse a knowledge of the character of the disease, to promote agreement among physicians as to the necessity of prophylactic measures and their nature, and to determine how soon a consensus of the best medical opinion would support radical action by the Health Department.

In 1889, at the instance of the Medical Commissioner of Health, Dr. J. D. Bryant, the Board passed a resolution calling on the consulting pathologists of the Department for a report on the causation and prevention of pulmonary tuberculosis. A report was prepared and forwarded, which recommended the adoption of certain measures designed to limit the spread of this disease. To test medical opinion in New York on this subject, Dr. Bryant addressed a letter to twenty-four of the most prominent and influential physicians of the city, asking for their opinion as to the necessity and advisability of action by the Board of Health looking to the sanitary surveillance of tuberculosis. Only five or six replies were received to these letters, and these would not justify action, with



the exception of two, which advised interference on the part of the Board of Health. There were newspaper interviews with numerous prominent physicians at this time, and in all of these, with one exception, the opinion was expressed that no action was called for by the Health Department. The Health Board, therefore, determined to wait until the medical profession would offer more cordial support. A large number of leaflets, however, were printed and distributed, giving the essential known facts regarding the communicability of tuberculosis, and a campaign of education was begun. This action of the New York City Board of Health in 1889 is believed to have been the first movement officially taken by any municipal sanitary board toward the formal supervision of tuberculosis.

In the fall of 1893 the next movement was begun by the presentation to the Board of a report from Dr. H. M. Biggs, pathologist to the Health Department, calling attention anew to the sanitary importance of this disease. In this document specific recommendations were made, and emphasis was particularly laid on the following facts:

1. Tuberculosis is a communicable disease, and is distinctly preventable.
2. It is acquired by the direct transmission of the tubercle bacilli from the sick to the well, usually by means of the dried and pulverized sputum floating as dust in the air.
3. It can be largely prevented by simple and easily applied measures of cleanliness and disinfection.

The report concluded as follows:

The time has arrived when the knowledge concerning the causation, extension, and prevention of pulmonary tuberculosis is sufficiently definite to make possible the adoption of important practical measures for its restriction; yet these measures must at present differ in many respects from the more summary proceedings justified in other more readily transmitted diseases, more properly called contagious; for it is to be remembered that while tuberculosis is always the result of infection, yet it is far less readily communicated than some contagious diseases, and, with proper precautions, victims of this disease may, without endangering others, pursue their usual avocations.

I would therefore recommend:

First. That there be systematically disseminated among the people, by means of circulars, publications, etc., the knowledge that every tubercular person may be a source of actual danger to his associates, and his own chances of recovery may be diminished, if the discharges from the lungs are not immediately destroyed or rendered harmless.

Second. That all public institutions, such as asylums, homes, hospitals, dispensaries, etc., be required to transmit to the Board of Health the names and addresses of all persons suffering from pulmonary tuberculosis, within seven days of the time when such persons first came under observation.

Third. That special inspectors be assigned to duty for the investigation of this disease, and whenever the Department has become aware of the existence of families or premises where tuberculosis exists, or has recently existed (as in case of death or removal), it shall be the duty of these inspectors to visit such premises, deliver proper circulars and give suitable information to the persons residing there, and take such specific measures of disinfection as are required in each case.

Fourth. That the Board urge upon hospital authorities the importance of separation, so far as possible in the hospitals of this city, of persons suffering from pulmonary tuberculosis from those affected with other diseases, and urge that proper wards be set apart for the treatment of this disease.

Fifth. That the Department of Charities and Correction of this city be requested to take such action as is necessary to provide a hospital, to be known as the "Consumptive Hospital," to be used for the exclusive treatment of this disease, and that, so far as practicable, all inmates of the various institutions under its care, suffering from tuberculosis, be transferred to this hospital.

Sixth. That the Health Department undertake the bacteriological examination of the sputum for diagnosis in every case of pulmonary disease of doubtful character in private dwellings, boarding-houses, or tenement-houses, where the physician in attendance desires that this should be done. This procedure to be carried out with a view of obtaining definite knowledge upon which the proper sanitary surveillance of those suffering from tuberculosis can be based.

Seventh. That all physicians practising their profession in this city be requested to notify this Board of all cases of pulmonary tuberculosis coming under their professional care.

For the proper performance of the preliminary work as detailed above, a special corps of medical inspectors should be provided, whose duties should be entirely confined to work connected with the investigation of tuberculosis and the carrying out of the means to be taken for its prevention.

Finally, in urging the adoption of the recommendations of this report, or some similar ones, I would add that there is, it seems to me, a widespread feeling among the medical profession and the laity that some sufficient means should be at once taken to prevent the great and unnecessary loss of human life caused by consumption, and that it is imperative that sanitary authorities adopt such measures as science has shown to be practicable and efficient in controlling the ravages of this disease.

It is my belief that the New York City Board of Health, which has so often achieved such notable success in the management and control of other contagious diseases, should take the lead in this matter and adopt measures to meet this new and urgent demand upon its resources.

This report with its recommendations practically in the form as stated, was adopted by the Board, December 13, 1893, on recommendation of the Medical Commissioner, Dr. Cyrus Edson, and on January 24, 1894, Dr. H. M. Biggs presented another communication including further recommendations designed for the efficient execution of the general plan. Of these latter the most important was the recommendation

That medical sanitary inspectors visit all premises which have been occupied by consumptive patients and vacated either by death or removal, and direct as to the removal of infected articles for disinfection by the Department, and forward written recommendations as to the cleansing and renovation of the premises. On the basis of these recommendations an order shall be issued by the Board on the owner of the premises, with directions as to their renovation, notifying him that the Board will not allow the premises to be occupied by any other persons than those living there at the time, until the order has been complied with. At the same time the following placard, with the name and address filled in, shall be furnished to a sanitary inspector to be posted upon the door of the apartment:

HEALTH DEPARTMENT,
No. 301 Mott Street, New York.

NOTICE.

Consumption is a communicable disease. This apartment has been occupied by a consumptive, and may have thus become infected. It must not be oc-

cupied by persons other than those now residing here until an order of the Board of Health, directing that it be cleansed and renovated, has been complied with.

Name of occupant

Floor

No.

Street.

This notice must not be removed until the order of the Board of Health has been complied with.

By order

The recommendations of the second report were adopted by the Health Board February 14, 1894, and circulars of information to physicians were ordered printed. Accordingly, the following circular was prepared and a copy sent to every physician having an office in New York City:

Circular of Information to Physicians regarding the Measures Adopted by the Board of Health for the Prevention of Tuberculosis in the City of New York.

HEALTH DEPARTMENT, No. 301 Mott Street,
NEW YORK, February 13, 1894.

The communicability of pulmonary tuberculosis has been so thoroughly established, and is now so generally recognized by the medical profession throughout the world, that the Board of Health of New York City has determined that the time has arrived when active steps should be taken looking toward its prevention in this city. The Board has therefore resolved to adopt the following preliminary measures:

1. The Department will hereafter register the name, address, sex, and age of every person suffering from tuberculosis in this city, so far as such information can be obtained, and respectfully requests that hereafter all physicians forward such information on the postal cards ordinarily employed for reporting cases of contagious disease. This information will be solely for the use of the Department, and in no case will visits be made to such persons by the inspectors of the Department, nor will the Department assume any sanitary surveillance of such patients, unless the person resides in a tenement-house, boarding-house, or hotel, or unless the attending physician requests that an inspection of the premises be made; and in no case where the person resides in a tenement-house, boarding-house, or hotel, will any action be taken if the physician requests that no visits be made by inspectors, and is willing himself to deliver circulars of information, or furnish such equivalent information as is required to prevent the communication of the disease to others.

2. Where the Department obtains knowledge of the existence of cases of pulmonary tuberculosis residing in tenement-houses, boarding-houses, or hotels (unless the case has been reported by a physician, and he requests that no visits be made) inspectors will visit the premises and family, will leave circulars of information, and instruct the person suffering from tuberculosis and the family as to the measures which should be taken to guard against the spread of the disease, and, if it is considered necessary, will make such recommendations for the cleansing or renovation of the apartment as may be required to render it free from infectious matter.

3. In all cases where it comes to the knowledge of the Department that premises which have been occupied by a tubercular patient have been vacated by death or removal, an inspector will visit the premises and direct the removal of infected articles, such as carpets, rugs, bedding, etc., for disinfection, and will make such written recommendations to the Board as to the cleansing and renovation of the apartment as may be required. An order embodying these recommendations will then be issued to the owner of the premises, and compliance with this order will be enforced. No other persons than those there residing at the time will be allowed to occupy such apartments until the order of the Board has been complied with. Infected articles, such as

carpets, rugs, etc., will be removed by the Department, disinfected, and returned without charge to the owner.

4. For the prevention and treatment of pulmonary tuberculosis it becomes of vital importance that a positive diagnosis shall be made at the earliest possible moment, and that the value of bacteriological examinations of the sputa for this purpose may be at the service of physicians in all cases not under treatment in hospitals, the Department is prepared to make such bacteriological examinations for diagnosis, if samples of the sputa, freshly discharged, are furnished in clean, wide-necked, stoppered bottles, accompanied by the name, age, sex, and address of the patient, duration of the disease, and the name and address of the attending physician. Bottles for collecting such sputa, with blank forms to be filled in, can be obtained at any of the drug stores now used as stations for the distribution and collection of serum tubes for diphtheria cultures. After the sputum has been obtained, if the bottle, with the accompanying slip filled out, is left at any one of these stations, it will be collected by the Department, examined microscopically, and a report of the examination forwarded to the attending physician free of charge.

5. The authorities of all public institutions, such as hospitals, dispensaries, asylums, prisons, homes, etc., will be required to furnish to the Department the name, sex, age, occupation, and last address of every tubercular patient coming under observation within seven days of such time.

It is the earnest wish of the Board of Health that all practising physicians in this city co-operate with the board in an earnest and determined effort to restrict the ravages of this the most prevalent and formidable disease with which we have to deal.

By order of the Board of Health,

CHARLES G. WILSON, *President*.

EMMONS CLARK, *Secretary*.

In addition, the following circular of information for consumptives was prepared and printed in English, German, Hebrew, and Italian.

Information for Consumptives and Those Living with Them.

HEALTH DEPARTMENT, No. 301 Mott Street,
NEW YORK, February 13, 1894.

Consumption is a disease which can be taken from others, and is not simply caused by colds. A cold may make it easier to take the disease. It is usually caused by germs which enter the body with the air breathed. The matter which consumptives cough or spit up contains these germs in great numbers—frequently millions are discharged in a single day. This matter, spit upon the floor, wall, or elsewhere, is apt to dry, become pulverized, and float in the air as dust. The dust contains the germs, and thus they enter the body with the air breathed. The breath of a consumptive does not contain the germs and will not produce the disease. A well person catches the disease from a consumptive only by in some way taking in the matter coughed up by the consumptive.

Consumption can often be cured if its nature is recognized early and proper means are taken for its treatment. *In a majority of cases it is not a fatal disease.*

It is not dangerous for other persons to live with a consumptive, if the matter coughed up by the consumptive is at once destroyed. This matter should not be spit upon the floor, carpet, stove, wall, or street, or anywhere except into a cup kept for that purpose. The cup should contain water, so that the matter may not dry, and should be emptied into the closet at least twice a day and carefully washed with hot water. Great care should be taken by a consumptive that his hands, face, and clothing do not become soiled with the matter coughed up. If they do become soiled they should be at once washed with hot water and soap. When consumptives are away from home, the matter coughed up may be received on cloths, which should be at

once burned on returning home. If handkerchiefs are used (worthless cloths which can be burned are far better) they should be boiled in water by themselves before being washed.

It is better for a consumptive to sleep alone, and his bed-clothing and personal clothing should be boiled and washed separately from the clothing belonging to other people.

Whenever a person is thought to be suffering from consumption, the name and address should be sent at once to the Health Department, on a postal card, with a statement of this fact. A medical inspector from the Health Department will then call and examine the person to see if he has consumption, providing he has no physician, and, if necessary, will give proper directions to prevent others from catching the disease.

Frequently a person suffering from consumption may not only do his usual work without giving the disease to others, but may also get well, if the matter coughed up is properly destroyed.

Rooms that have been occupied by consumptives should be thoroughly cleaned, scrubbed, whitewashed, painted, or papered before they are again occupied. Carpets, rugs, bedding, etc., from rooms which have been occupied by consumptives, should be disinfected. The Health Department should be notified, when they will be sent for, disinfected, and returned to the owner free of charge, or, if he so desires, they will be destroyed.

By order of the Board of Health,

CHARLES G. WILSON, *President*.

EMMONS CLARK, *Secretary*.

A supply of these circulars was sent to the hospitals and dispensaries throughout the city, with the request that a copy be given to every consumptive patient applying for relief, and, in addition, copies have been delivered generally by an inspector to all reported living cases of tuberculosis, except those under the care of private physicians.

A registry of reported cases was begun the first day of March, and from that date till the first of November, 3252 living cases had been reported to the Department. Notice was sent to all the hospitals, dispensaries, and other institutions in the city where cases of tuberculosis might be treated, informing them of the new requirements of the Health Department, and directing that reports of all cases be sent to the Department weekly, in accordance with the resolution of the Board.

The circular of information delivered to physicians asked for their co-operation, and requested that reports be sent of all cases that came under observation. The reports from private physicians were not made compulsory. From the two sources mentioned above, *i. e.*, institutions and private physicians, developed to their utmost, a nearly complete record of the cases of active tuberculosis living in any city might be obtained. It was not deemed wise, however, in the beginning, to make it obligatory for physicians to report cases, especially as it was comparatively easy to obtain reports from public institutions, which would give the most numerous class of patients and those whom it was most important to instruct.

A registry of the deaths due to tuberculosis was also begun March 1st, and this contained on November 1st, 3316 names. This registry is made up by the examination daily of the death certificates filed with the

Department, and a record is made of all those in which tuberculosis in any form is assigned as the cause of death.

The records of living cases and of deaths are preserved in two card indices—one, a name index, arranged alphabetically, and the other a street index, arranged by streets and by the house number of each street. Dead cases are entered on blue cards and living cases on pink cards. In addition to the name and address, there are entered on the cards the age, sex, and occupation of the individual; in living cases also the institution from which reported and the date of report, and in dead cases the date of death. The registry finally is made more complete by platting all cases on a series of maps which cover the whole of Manhattan Island. There are one hundred and ten of these maps bound in atlas form. They were made under the direction of the Department, and each one, three by two feet in size, is drawn to a scale of one hundred feet to an inch. This scale is large enough to show every house-lot in the city by an area in which can be platted forty cases of tuberculosis. The maps are so arranged that they represent the sanitary districts of the United States census of 1890. These districts are supposed to contain a more or less homogeneous population. The entry of cases is made by conventional signs, which indicate the month and year of report, and whether the case is living or dead. It is believed that such a systematic study of the history of infected spots as can eventually be made from these maps will hardly fail to aid greatly in our knowledge of the methods of extension of tuberculosis and the measures required for its repression.

With certain exceptions, such as patients under the care of private physicians, all reported cases, living or dead, are assigned to the medical inspectors of tuberculosis for the district from which the cases are reported. The inspector visits the address given, and, if the patient is living, leaves a circular of information and gives verbal instruction to the friends about the danger of infection and the care of the sputum. If the address is that of a dead patient, or if the patient, though living, has moved, the inspector examines the premises and makes such recommendations as seem to him necessary to render the habitation free from danger of infection. These recommendations, made out on a prescribed form, usually advise the following routine treatment of apartments: Kalsomined or whitewashed walls or ceilings are washed with a solution of washing-soda (one-half pound to three gallons of hot water), and then kalsomined or whitewashed again; paper walls or ceilings are similarly washed and are repapered; the woodwork is scrubbed with the soda solution and repainted. The inspector's recommendations are forwarded to the Board, and on them as a basis a ten-day order is issued on the landlord, requiring him to carry out the specified renovation. The execution of the order is then (as with all orders of the Board) placed

under the supervision of the Sanitary Police. The premises are re-inspected, and if at the expiration of ten days the owner has not complied with the order it is referred to the attorney of the Board for enforcement. This procedure was determined upon because of the difficulty of disinfection of apartments in which cases of tuberculosis have been, and the greater efficiency attained by the system of renovation. The Health Department, moreover, is relieved of much labor and expense. The method is easy of enforcement, as is shown by the fact that compliance with the order has not been refused in a single case. The chief point of interest in this plan is that renovation rather than disinfection is called for. Disinfection involves the use of materials and methods which are not universally familiar. The method of renovation required is understood by all, and is more efficient than any method of disinfection which could be employed; and, finally, disinfection often leaves the apartment in an undesirable condition, while renovation is, of course, always appreciated by the tenant. It is in line with this policy that soda solutions are advised for use instead of sublimate solutions. Soda is an efficient cleansing agent, and is familiarly known; is usually in the house, and is comparatively inexpensive; and, finally, will be used, and used in sufficient quantity, while more expensive and unfamiliar disinfectants would not be employed.

Not only the apartments, but the household goods should, of course, be freed from infection, and the attempt has been made to have goods, such as infected bedding, carpets, etc., disinfected at the city disinfecting station. This, however, has been only partially successful, for often a considerable interval has elapsed between the death of the patient and the visit of the inspector, and goods have often been washed, destroyed, or sent away to be cleaned. Still, when feasible, goods are removed by the Department and properly disinfected.

At the same time that the other measures were introduced, arrangements were made for the collection and examination of sputa for the diagnosis of suspected cases of tuberculosis. This measure was designed to give greater accuracy to the work of the Health Department in dealing with many cases and to enlist the co-operation of physicians by affording them assistance in the diagnosis of cases which otherwise would often be without their reach. It is in line with the previous work of the Department in making without charge bacteriological examinations for the diagnosis of diphtheria. In carrying out this measure, two-ounce jelly-jars with metallic screw tops fitted with rubber washers are supplied at forty or more apothecary shops, scattered at convenient points throughout the city. These places are already familiar as depots for the distribution of "culture outfits" for the examination of diphtheria. With the jars are delivered circulars containing the following directions as to the collection of sputa:

Sputum should be collected only in clean, wide-mouthed, well-stoppered bottles, with a capacity of at least four ounces. Suitable bottles can be obtained at any of the depots for the distribution and collection of diphtheria culture tubes.

Care should be taken that bronchial and not pharyngeal secretion is collected, and the expectoration discharged early in the morning is to be preferred. If the expectoration is scanty, the entire amount discharged in twenty-four hours should be collected.

The data asked in the accompanying blank should be carefully filled out in every case.

The data asked for are the name, age, sex, address, and occupation of the patient, the name and address of the attending physician, the duration of the disease, and an answer to the question whether there have been previous cases of tuberculosis in the family. These are required for record in case the sputum contains tubercle bacilli, and examinations will not be made unless these data are forwarded with sputum. The jars containing the sputa, and the forms filled out, are returned to the depot and are daily collected by an employé of the Department. The sputum is examined bacteriologically in the laboratory and a report is sent to the attending physician the following day.

In the prosecution of the work as above outlined, certain difficulties have been encountered. These mainly relate to the obtaining of full registration of cases. As yet, private physicians do not generally report their cases of tuberculosis, although more and more cases are being constantly reported, and the data in a constantly increasing number of cases are being obtained through the sputa examinations. The reports from institutions, therefore, furnish the largest proportion of the cases recorded, and such reports are in some instances very inaccurate. Many cases escape detection on account of the inefficient examination given patients. Incipient tuberculosis is not usually diagnosed in hospitals and dispensaries, and occasionally, perhaps, an erroneous diagnosis of tuberculosis is made. The addresses also given in many reports need revision. Patients frequently give their addresses wrongly through intention, and perhaps as frequently the clerk records the address incorrectly. Naturally, therefore, a great many false addresses reach the Department and are excluded from the record only by the search of the inspectors. Not infrequently, too, in death certificates, pneumonia and chronic bronchitis are given as the cause of death to conceal cases of tuberculosis. The importance of this factor is increased through the influence of the industrial insurance companies. It has been found that a large proportion, even of dispensary patients, carry a small life insurance, frequently just enough to pay funeral expenses, and if tuberculosis is ascribed as the cause of death, policies issued by many of the industrial insurance companies are wholly or in part vitiated. The number of persons who are interested that the word tuberculosis shall not appear on the death certificate may be inferred from the fact that investigation

has shown that a single company carries nearly 400,000 policies in the metropolitan district, which corresponds pretty closely with the city of New York. Attempts to influence the statements on the death certificates are therefore common. Direct bribes are offered, and the remark, "Well, doctor, if I don't get the insurance I cannot pay your bill," may well be considered a forcible stimulus to some physicians to seek for other causes of death. An investigation is now being made of every case of death from diseases of the respiratory organs other than tuberculosis, to determine if the patient has been previously reported as suffering from tuberculosis, and in a number of instances, such previous reports have been found. The physician who has issued the death certificate is then called upon to explain the discrepancy.

The obvious results of the work done thus far lie in the evident effects in the education of the people as to the infectious nature of tuberculosis and the means to be taken for its prevention, and in the destruction of sources of infection by the renovation of infected apartments. It may be doubted whether any considerable degree of popular information as to the necessity of care for the sputum can be diffused through the non-English-speaking inhabitants of the poorest tenement-house districts, recruited as they continually are by fresh supplies of the most filthy and ignorant classes from all parts of Europe; but in the better class of tenements, where the inhabitants speak English, there has been already such a spread of knowledge concerning the nature of this disease that very frequently the inspectors now find at their first visits that all the precautions advised have been already taken. It is worthy of note, too, that while the number of apparent deaths from tuberculosis has been falling for several years, yet this year a much greater diminution has taken place than ever before.

Another perhaps not unimportant result of the work in New York City is the influence on the action of other sanitary authorities. Similar measures have been adopted at the instance of Dr. Cyrus Edson by the New York State Board of Health, and measures and circulars of the New York City Board have been adopted by sanitary authorities in many other cities, and by State Boards in other States. Still the work of restriction of tuberculosis even in New York has but just begun. Among the most pressing needs of the future are hospitals for the treatment of advanced cases, sanatoria outside of New York, preferably in the pines of Long Island, for the care of incipient cases, inspection of factories, shops, and all other places where phthisical patients may be found, and enforcement of sanitary measures in these places, and in all places of public assembly and in the means of public conveyance.

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